



Description of
DE19937813

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The present invention concerns a liquid Haarwaschmittel on aqueous basis with optimal properties.

Such agents contain usually at least an surface-active substance, in particular an anionic surfactant, and, if it concerns shampoos, also a hair-conditioning polymer, preferably a cationic.

Although itself these products have actual preserved, still a need exists to the improvement of their efficacy, in particular regarding volumes, glossiness, combing barness and Feeling of the hairs washed with it.

Beyond that a good foam ability, above all an high foam volume, becomes expected of a body cleaning agent.

Finally such products should be also extreme mild, D. h., a complete striking and mucous membrane compatibility exhibit.

In addition these shampoos, in particular if they are gelförmig and transparent, are viscosity-stable  topits.

That one receives a Haarwaschmittel, these requirements were now found the optimal met, if this mixture on aqueous basis

a) 2,5 to 50 Gew. - % at least polyethylene glycol (3-10) - a C8-C18-Alkylcitratsulfosuccinats and/ or its water-soluble salts; and

b) 0,25 to 10 Gew. - % of a C1-C4-Alkylacrylat/Dimethyl or Diethylaminoethyl (meth) acrylat/C10-C30-Alkyl-Polyethylenglykol-10-30-itaconat-Terpolymere, calculated in each case on the total composition, contains.

An other advantage of these compositions exists in the thickening efficacy of these mixtures, D. h., it is not required to add additional inorganic or organic thickeners in order to reach for shampoos particularly preferred the viscosity range from approximately 1000 to 60,000 mPa.s with 25 DEG C, measured in the Brookfield Viskosimeter.

The presence of such thickeners can cause stability problems, since they can interfere with other ingredients. This is not with the shampoos on basis of the composition according to invention the case.

Preferred Polyethylenglykol-C8-C16-Alkylcitrat-sulfosuccinat in the scope of the invention is the PEG-5-Laurylcitrat-Sulfosuccinat, in particular as disodium salt.

This surfactant is as "Rewopol TM SELF-SERVICE CS50" as 50%iges concentrate in the trade and usually becomes in combination with other anionic surfactants, in particular Alkylethersulfaten, used.

The general formula of these surfactants is

EMI2.1

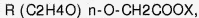
whereby R a C8-C18-Alkyl or an alkenyl residue and an x a number from 3 to 10 means.

Suitable other anion-active surfactants in the scope of the invention can do additional in an amount from at least 2.5 to approximately 4.5 Gew. - %, preferably 10 to 25 Gew. - % of the composition, contained its.

It concerns such of the sulfate, sulfone RK, carboxylate and alkyl phosphate type, above all natural those, which arrive in shampoos usually at the use, for example the known C10-C18-Alkylsulfate and in particular the corresponding Ethersulfate, for example C12-C14 Alkylethersulfat, Laurylthersulfat, in particular with 1 to 4 ethylene oxide groups in the molecule, further monoglyceride (ether) sulfates, fatty acid amide sulfates, which become obtained by ethoxylation and subsequent sulfation of Fettsäurealkanolamiden, and whose alkali salts as well as salts of langkettiger mono and dialkyl phosphates, which represent mild, strike-compatible Detergentien.

In the scope of the invention further suitable anionic surfactants are alpha - olefine sulfonates and/ or. their salts and in particular alkali salts of sulfo succinic acid half star, for example the disodium salt of the Monoctylsulfosuccinats, and alkali salts of langkettiger Monoalkylethoxysulfosuccinate.

Suitable surfactants of the carboxylate type are Alkylpolyethercarbonsäuren and their salts of the formula



where R preferably mean a C8-C20-Alkylgruppe, preferably a C12-C14-Alkylgruppe, n a number from 1 to 20, preferably 2 to 17, and X H or a cation of the group sodium, potassium, magnesium and ammonium, which can be hydroxyalkyl-substituted if necessary, as well as Alkylamidopolyethercarbonsäuren of the general formula

EMI3.1

where R and X have those managing indicated importance and n in particular for a number from 1 to 10, preferably 2.5 to 5, stand.

Such products are AKYPO SOFT since longer known and in the trade, the for example bottom trade name "AKYPO TM" and "TM".

Also C8-C20-Acylisethionate can become, however or in the mixture with other surfactants, used, likewise sulfo fatty acids and their ester.

Also mixtures can become from several anionic surfactants used, for example a mixture from an alpha - olefine sulfonate and a Sulfosuccinat, preferably in the ratio of 1: 3 to 3: 1, or a Ethersulfat and a Polyethercarbonsäure or a Alkylamidoethercarbonsäure.

A revue over the anion-active surfactants arriving in liquid body cleaning agents at the use in all other respects is in the Monographie of K. Schrader, "bases and prescriptions of the cosmetics", 2. Aufl. (1989, Hüthig book publishing house), S. 683 to 691.

The preferred quantity range at other anionic surfactants in the liquid hair cleaning agents according to invention lies between approximately 5 and about 30 Gew. - %, in particular with approximately 7.5 to approximately 25 Gew. - %, particularly preferred with approximately 10 to approximately 20 Gew. - %, calculated on the total composition of the agent, according to whether it concerns concentrates.

The total proportion of anionic surfactants preferably lies between approximately 5 and 50 Gew. - %, calculated on the total composition of the shampoo.

Particularly preferred is the N-Lauroylglutamat, in particular as sodium salt. Other suitable N-Acylaminocarbonsäuren is for example N-Lauroylsarcosinat, N-C12-C18-Acylasparaginsäure, N-Myristoylsarcosinat, N-Oleoylsarcosinat, N-Lauroylmethylalanin, N-Lauroyllysin and N-Lauroylaminopropylglycin, preferably in form of their water-soluble alkali or ammonium, in particular sodium salts.

The second essential ingredient of the shampoos according to invention is a Terpolymerisat from a C1-C4-Alkylacrylat, preferably an ethyl acrylate, a dimethyl or a Diethylaminoethylacrylat or -methacrylat and a C10-C30 Alkyl-Polyethylenglykol-10-30-itaconat.

The preparation this polymers and their use in cosmetic agents is actual known. It was however surprising and not foreseeable that they exhibit a stabilizing, foam-improving in particular Detergensgemi after the invention and the skin irritation working against as well as additional conditioning activity.

These products can become by copolymerization corresponding monomers in actual known manner the prepared; they are also available on the market.

As preferred Itaconsäureester becomes a PEG-10-25, in particular PEG-20 C10-C30-alkylitaconat used.

The preferred level is appropriate for about 0.75 to approximately 5 Gew with approximately 0.5 to 7.5, in particular, - % of the Haarwaschmittels.

The compositions according to invention can contain nonionic surfactants as other essential ingredient. Such are preferably Alkylpolyglucoside of the formula $R-O (R < 1 > O) n-Zx$.

The compositions according to invention can contain nonionic surfactants as other essential ingredient. Such are preferably Alkylpolyglucoside of the formula $R-O (R < 1 > O) n-Zx$, where R an alkyl group with 8 to 18 carbon atoms, $R < 1 >$ an ethyl or a group of propylenes, Z a Saccharidrest with 5 to 6 carbon atoms, n a number from 0 to 10, and x a number between 1 and 5 means.

This Alkylpolyglucoside in particular became as excellent strike-compatible foam-improving agents in liquid wash and body cleaning agents known and preferably is in an amount from approximately 1 to 15, in particular 2.5 to 10 Gew. - % of the total composition contain.

Other nonionic Tensidbestandteile is for example langkettige fatty acid mono and - dialkanolamid, as Cocofettsäuremonoethanolamid and Myristinfettsäuremonoethanolamid, which also as foam amplifier used to become to be able.

Suitable nonionic surfactants are also the known ethoxylates of fatty alcohols such as z. B. Laureth, Coceth, Myristeth, Ceteth, Oleth products.

Other along-useful nonionic surfactants are z. B. the various sorbitan ester, like Polyethylenglykolsorbitanstearinsäureester, Fettsäurepolyglykolester or also mixing condensates from ethylene oxide and propylene oxide, as they are the for example bottom trade name "Pluronic" in the traffic.

Other insertable nonionic surfactants are amine oxides in an amount from approximately 0.25 to approximately 5, preferably about 0.5 to approximately 3.5 Gew. - %, calculated on the total composition of the agent.

Such amine oxides belong for a long time to the state of the art, for example C12-C18-Alkyldimethylaminoxid such as Lauryldimethylaminoxid, C12-C18-Alkylamidopropyl or - ethyl amine oxides, C12-C18-Alkyldi (hydroxyethyl) - or - (hydroxypropyl) amine oxides, or also amine oxides with ethylenoxid and/or groups of propylene oxides in the alkyl chain.

Such amine oxides are the for example bottom designations "Ammonyx TM", "Aromox TM" or "Genaminox TM" in the trade.

Mixtures from anion-active surfactants and Alkylpolyglucosiden as well as their use in liquid body cleaning agents are actual already known, for example from the EP-A 70,074. The there described mixtures are also in principle in the frame of the present invention suitable; likewise the mixtures from Sulfosuccinaten and Alkylpolyglucosiden, known from the EP-A 358,216.

The compositions according to invention can do also amphoteric as other Tensidbestandteil and/or.

zwitterionic surfactants in an amount from approximately 0.5 to approximately 10, preferably from approximately 1 to approximately 5 Gew. - %, related to the total composition, contain.

As such in particular the various known betaines are such as Fettsäureamidoalkylbetaine and sulfo betaines, for example Laurylhydroxysulfobetain, to call; also langkettige alkyl amino acids such as Cocoaminoacetat, Cocoaminopropionat and Natriumcocoamphopropionat and - acetate as suitable proved.

In detail betaines of the structure can

EMI 7.1

whereby R mean a C8-C18-Alkylgruppe and a n 1 to 3,
Sulfo betaines of the structure

EMI 8.1

whereby R mean a C8-C18-Alkylgruppe and a n 1 to 3,
and Amidoalkylbetaine of the structure

EMI 8.2

whereby R mean a C8-C18-Alkylgruppe and a n 1 to 3, used become.

The weight ratio anionic surfactant to C8-C22-Acylaminocarbonsäure (n), if present lies, after a preferred embodiment preferably between 10: 1 and 1: 3, of C8-C22-Acylaminocarbonsäure (n) to nonionic surfactant, if present, between 1: 3 to 3: 1, and of C8-C22 eeryl aminocarbonic acid (n) to the amphoteric and/or. zwitterionic surfactant, if present, between 1: 3 and 3: 1.

The shampoos according to invention contain preferably hair-conditioning polymers. Their portion in the compositions according to invention is appropriate usually between approximately 0.05 and about 7.5, preferably 0.1 and 5, in particular for about 0.25 to 2.5 Gew. - %, related to the total composition of the agent. Nonionic polymers, preferably alcohol and/or water-soluble Vinylpyrrolidon polymers like a Vinylpyrrolidon Homopolymerisat or - copolymer, can be in particular with vinyl acetate.

Suitable Vinylpyrrolidon polymers are z. B. those the bottom trade name "Luviskol TM" of known products, for example the Homopolymerisate "Luviskol TM K 30, K 60 and K 90" as well as the water and/or. alcohol-soluble copolymers from vinylpyrrolidone and vinyl acetate, those the bottom trade name "Luviskol TM VA 55 and/or. VA 64 " of the BASF AG sold become.

Other suitable nonionic polymers are vinylpyrrolidone/vinyl acetate/Vinylpropionat copolymers like "Luviskol TM VAP 343", Vinylpyrrolidon/(Meth) acrylic acid ester copolymers as well as Chitosan derivatives.

In place of or additional to the nonionic polymers can become as hair-conditioning polymers in particular cationic and/or also anionic and/or amphoteric polymers in the amounts mentioned used.

Preferred hair-conditioning cationic polymers are the long-known quaternary cellulose derivatives of the type "polymer JR" as well as quaternized Homo and copolymers of the Dimethyldiallylammoniumchlorids, like them the bottom trade name "Merquat TM" in the trade are, quaternary Vinylpyrrolidon of copolymers, in particular with Dialkylaminoalkyl (meth) acrylates, like them the bottom name "Gafquat TM" known are, copolymers from vinylpyrrolidone and Vinytimidazoliummethochlorid, which become the bottom trade name "Luviquat TM" offered, Polyamino polyamidederivatives, for example copolymers of adipic acid Dimethylaminohydroxypropyldiethylentriamin, how they become the bottom name "Cartaretine TM F" sold, as well as to-quaternary langkettige ammonium compounds in the US-PS 4,157,388 described urea structure, those the bottom trade name "Mirapol TM A 15" in the trade are.

One refers in this connection also on 32 17 059 cation-active polymers mentioned into the DE-OS 25 21 960, 28 11 010, 30 44 738 and as well as in the EP-A 337,354 on the pages 3 to 7 described products. Also mixtures of various cationic polymers used can become.

Among the cationic polymers also the,643 Quaternisierungsprodukte from graft polymers of

organopolysiloxanes and Polyethyloxazolinen, described in the EP-A 524,612 and the EP-A 640, rank.

When amphoteric polymers, which arrive alone or in the mixture with at least one other cationic, nonionic or anionic polymers at the use, are in particular copolymers from N-Octylacrylamid, (Meth) acrylic acid and third. - Butylaminoethylmethacrylat of the type "Amphomer TM"; Copolymers from Methacryloylethylbetain and alkyl methacrylates of the type "Yukaformer TM", z. B. Butylmethacrylat copolymers "Yukaformer the TM Am75"; Copolymers from carboxyl groups and sulfone groups contained monomers, z. B. (Meth) acrylic acid and itaconic acid, with basic groups, in particular amino group, contained monomers such as mono and/or. Dialkylaminoalkyl (meth) acrylates and/or. Mono and/or. Dialkylaminoalkyl (meth) acrylamides; Copolymers from N-Octylacrylamid, methyl methacrylate, Hydroxypropylmethacrylat, nth ore. - Butylaminoethylmethacrylat and acrylic acid as well as from the USA 3.927.199 known copolymers mentioned.

Suitable anionic polymers are Vinylalkylether, in particular methyl vinyl ethers/maleic acid copolymers, which result from hydrolysis of Vinyl ether/Maleinsäureanhydrid copolymers and the bottom trade name "Gantrez TM become ON or IT" sold. These polymers can be also part-esterified, for example "Gantrez TM IT 225", the ethyl esters of a Ethylvinylethers/a maleic acid copolymer, or the Butyl or Isobutylester of the same.

Other suitable anionic polymers are in particular Vinylacetat/Crotonsäure or vinyl acetate/Vinylneodecanoat/Crotonsäure copolymers of the type "Resyn TM"; Sodium acrylate/vinyl alcohol copolymers of the type "Hydagen TM F", Natriumpolystyrolsulfonat, z. B. "Flexan TM 130"; Ethyl acrylate/acrylic acid/nth ore. - Butylacrylamid copolymers of the type "Ultrasound TM"; Vinylpyrrolidone/vinyl acetate/Itaconsäure copolymers, acrylic acid/acrylamide copolymers and/or. Sodium salts the same of the type "Reten TM"; etc.

The shampoos according to invention know additional also still other conditioning active ingredients such as protein hydrolysates and polypeptides, z. B. Keratinhydrolysate, Kollagenhydrolysate of the type "Nutrilan TM" or Elastinhydrolysate as well as in particular also vegetable, if necessary kationisierte protein hydrolysates, z. B. "Glucadin TM" contain.

The Haarwaschmittel according to invention can contain naturally all into this conventional fabrics.

As such complexing agents, dyes, preservative, pH controller, Viskositätsregler are exemplary such as inorganic salts, as far as they are contained in the Tensid starting mixtures not anyway, fragrances, Perl gloss means, thickener, wet retaining means, vegetable and animal oils such as Jojobaöl, fatty acid ester such as z. B. Isopropyl myristate, Ethylpalmitat, lecithin and its derivatives etc. mentioned.

A listing of such additives is likewise with Schrader, I.C., on S. 695 to 722.

An other preferred ingredient is Ethoxydiglykol, preferably in an amount from 0,1 to 5 Gew. - % of the agent according to invention.

Finally also still known polysiloxanes can become as conditioning agents in the liquid Haarwaschmitteln according to invention along-used. Their preferred proportion is appropriate thereby for instance between 0,5 and about 5, in particular for 1 to 3 Gew. - % of the total composition.

Suitable ones are both volatile and severe-volatile cyclic or linear polysiloxanes, for example those the bottom trivial name "Dimethicone" and/or. "Phenyldimethicone" as well as "Cyclomethicone" of known silicone oils.

Suitable ones are for example also into the EP-A 398,177 described silicone derivatives, which become used in combination with Alkylpolyglucosiden in liquid Detergens compositions there.

Particularly preferred is the use of actual known plant extracts, preferably in an amount from approximately 0.01 to approximately 10 Gew. - %, calculated as Trockenrückstand of the same on the total amount of the Haarwaschmittels, which become stabilized by the presence of the terpolymer.

Suitable aqueous (z. B. Water vapour-distilled), alcoholic or aqueous of alcoholic plant extracts are in particular extracts of leaves, fruits, flowers, roots, crusts or strains of aloe, pineapple, Artischocken, arnica, valerian, Bilsenkraut, Birke, Brennesseln, Echinacea, ivy, angel-pepper, Enzian, ferns, Fichtennadeln, broom, oat, Hagebutten, Hamamelis, hay flowers, elder, hop, Hufelattich, Johannisbeeren, chamomiles, carrots, Kastanien, clover, Klettenwurzeln, lime tree blooms, lily of the valley, sea algae, Melisse, Mistel, passion flowers, Ratanhia, Ringelblumen, Rosmarin, Rosskastanien, red thorn, Salbei, box stem, sheep sheaf, Schlüsselblumen, Taubnesseln, Thymian, wine sheets, white thorn, etc.

Suitable commercial products are for example the various "Extrapone TM", "Sedaplant TM" and "hexadecimplan TM". Extracts and their preparation are also in "Hagers handbook of the pharmaceutical practice", 4. Aufl., described.

In accordance with another embodiment of the invention the shampoos according to invention visible particles become added, preferably in an amount from approximately 0.05 to approximately 10 Gew. - %, in particular 0.5 to 5 Gew. - %, calculated on the Haarwaschmittel. By the presence of the terpolymer these particles in the shampoo become durably dispersed and stabilized.

Such particles are for example pigments such as Perl gloss pigments or other color gloss pigments, those to the gain of the glossiness also surface treated, z. B. metallized to be can.

Other particles can do colored microcapsules, filled or unfilled, its (see. z. B. the EP 0,590,538 A1); also in the DE 197 38 247 A1 described microparticles are suitable.

The particle diameter of these visible particles is appropriate preferably between approximately 1 and about 3000, in particular for about 25 to 50 and 2000 micron.

The compositions according to invention can contain also dyes to the direct or oxidative coloration of hairs, thus so called hue or coloring shampoos.

Shown has itself that the addition of the terpolymer also the coloring characteristics, in particular the coloring intensity of such coloring and/or. Hue shampoo significant increased.

The pH value of the compositions according to invention lies in the conventional range between approximately 5 and 8,5; for special products it can become also below 5 adjusted.

The viscosity is appropriate preferably in the range between approximately 2000 and about 75,000 mPa.s with 25 DEG C, preferably about 5000 to approximately 60,000, in particular 10,000 to 50,000 mPa.s with 25 DEG C, measured after Brookfield or Höppler with a shear stress of 10 seconds⁻¹ and a spindle No. 4 or 5.

Particularly preferred is clear gelförmige shampoos in the range between approximately 15,000 and about 40,000 mPa.s with 25 DEG C.

The compositions according to invention can natürlich also for body cleaning general, D. h. as showering and foam bath means used become.

The subsequent examples serve the illustration of the invention. The preparation of the products according to invention made by Zusammenrühren of the individual components in water, whereby also premixes of various ingredients used to become to be able. Example 1 shampoo concentrate

<tb> < TABLE> Columns=2>

<tb> Head Col 1:

<tb> Head Col 2: Gew. - %

<tb> Citronensäurelaurylpolglykolestersulfosuccinat, disodium salt< September> 10,0

<tb> < UCB AL=L> C12-C14-Fettalkoholethersulfat (&tilde& 2.5 EO)< September> 4,0

<tb> C8-C12-Alkylglucosid (P.D. SIMILAR 1.5)< SEPTEMBER> 4,0

<tb> Natriumlauroylglutamat< September> 2,0

<tb> < UCB AL=L> ethyl acrylate/Diethylaminoethylmethacrylat/C10-C20-Alkyl-/PEG-20-itaconat-Terpolymer< September> 3,0

<tb> < UCB AL=L> cationic polymer (Polyquaternium-7)< September> Gew. - %

<tb> sodium benzoate< September> 10,0

<tb>< UCB AL=L> Natriumsorbat< CEL AL=R> 4,0
 <tb> perfume< September> 4,0
 <tb> PEG-40-Hydriertes Ricinusöl< September> 2,0
 <tb> citric acid< CEL AL=R> 3,0
 <tb>< UCB AL=L> Benzophenone-3< September> 0,2
 <tb> waters< September> ad 100,0
 <tb> pH value< September> 6,0
 <tb>< UCB AL=L> viscosity with 25 DEG C in the Brookfield Viskosimeter, spindle No. 4 (5rpm)< September> &tilde& 40,000 mPa.s
 <tb>< /TABLE>

This shampoo became compared with a shampoo, which did not contain terpolymer.

The shampoo according to invention a shown significant better foam behavior concerning foam volumes, "creamy" of the foam and uniformity of the foam.

In the half side double-blind attempt at 10 subjects became also a significantly improved wet and drying combing barness, a soft touch and volumes as well as an increased glossiness observed.

The shampoo remained during three-month storage with 40 DEG C viscosity-stable. Example 2 shampoo concentrate for dry and/or. damaged hair

<tb>< TABLE> Columns=2>
 <tb> Head Col 1:
 <tb> Head Col 2: Gew. - %
 <tb> Citronensäurelaurylpolyglykolestersulfosuccinat, disodium salt< September> 4,0
 <tb>< UCB AL=L> Natriumlaurylethersulfat (&tilde& 2.5 EO)< September> 5,0
 <tb> Natriumlauroylsarkosinat< September> 2,0
 <tb>< UCB AL=L> C12-C14-Alkylglucosid (P.D. SIMILAR 1.4)< SEPTEMBER> 5,0
 <tb> Lauroylhydroxysultain< September> 2,0
 <tb>< UCB AL=L> of cationic conditioners (Esterquat; Tetranyl TM CO 40)< September> 0,8
 <tb> perfume< September> 0,5
 <tb>< UCB AL=L> ethyl acrylate/Diethylaminoethylmethacrylat/Lauryl-PEG-15-itaconat-Terpolymer< September> 3,0
 <tb> sodium benzoate< CEL AL=R> 0,6
 <tb> Polyquaternium-7< September> 1,0
 <tb> PEG-60-hydriertes Ricinusöl< September> 0,5
 <tb>< UCB AL=L> citric acid< CEL AL=R> 1,0
 <tb> waters< September> ad 100,0
 <tb> pH value< September> 6,0
 <tb> viscosity with 25 DEG C in the Brookfield Viskosimeter, spindle No. 4 (5rpm)< September> &tilde& 38,000 mPa.s
 <tb>< /TABLE>

It became a shampoo with very good foam abilities and good skin compatibility as well as better hair-conditioning properties opposite a shampoo without terpolymer obtained.

The shampoo remained with three-month storage with 40 DEG C viscosity-stable. Example 3 shampoo concentrate

<tb>< TABLE> Columns=2>
 <tb> Head Col 1:
 <tb> Head Col 2: Gew. - %
 <tb> Citronensäurelaurylpolyglykolestersulfosuccinat, disodium salt< September> 10,0
 <tb>< UCB AL=L> Natriumlaurylethersulfat (&tilde& 4 EO)< September> 5,0
 <tb> Natriumlauroylglutamat< September> 2,5
 <tb>< UCB AL=L> C12-C14-Alkylglucosid (P.D. SIMILAR 1.4)< SEPTEMBER> 4,5
 <tb> Kokosdimethylaminoxid< September> 1,5
 <tb>< UCB AL=L> Natriumcocoamphoacetat< September> 2,5
 <tb>< UCB AL=L> ethyl acrylate/Diethylaminoethylmethacrylat/C12-C14-Alkyl-PEG-15-itaconat-Terpolymer< September> 2,5

<tb>< UCB AL=L> preservative< September> 0,5
 <tb> Polyquaternium-7< September> 0,5
 <tb> citric acid< CEL AL=R> 0,5
 <tb>< UCB AL=L> lactic acid< September> 0,1
 <tb> Pyrrolidonecarbonsäure< September> 0,1
 <tb> glycolic acid< September> 0,1
 <tb>< UCB AL=L> malic acid< September> 0,1
 <tb> perfume< September> 0,5
 <tb> waters< September> ad 100,0
 <tb> pH value< CEL AL=R> 6,0
 <tb>< UCB AL=L> viscosity with 25 DEG C in the Brookfield Viskosimeter, spindle No. 4 (5rpm)< September> &tilde& 30,000 mPa.s
 <tb>< /TABLE>

This product shown opposite a Terpolymer free product a better foam behavior, an improved wet and drying combing barness, a glossiness and a volume of the hair washed with it and was viscosity-stable with three-month storage with 40 DEG C. Example 4 gel shampoo

<tb>< TABLE> Columns=2>
 <tb> Head Col 1:
 <tb> Head Col 2: Gew. - %
 <tb> Citronensäurelaurylpolyglykolestersulfosuccinat, disodium salt< September> 6,0
 <tb>< UCB AL=L> Natriumlaurylethersulfat (&tilde& 2.5 EO)< September> 6,0
 <tb> Natriumlauroylglutamat< September> 2,0
 <tb>< UCB AL=L> C12-C14-Alkylglucosid (P.D. SIMILAR 1.4)< SEPTEMBER> 5,0
 <tb> Cocoamidopropylbetain< September> 2,5
 <tb>< UCB AL=L> perfume< September> 0,5
 <tb>< UCB AL=L> ethyl acrylate/Diethylaminoethylmethacrylat/C10-C18-Alkyl-PEG-15-itaconat-Terpolymer< September> 3,0
 <tb>< UCB AL=L> sodium benzoate< September> 0,6
 <tb> Polyquaternium-7< September> 1,2
 <tb> micro particle (Floraspheres TM of the companies Floratech, mean particle diameter about 1300-1700 μ m)< September> 2,0
 <tb> PEG-60-hydriertes Ricinusöl< September> 0,5
 <tb>< UCB AL=L> citric acid< September> 1,0
 <tb> waters< September> ad 100,0
 <tb> pH value< September> 5,6
 <tb>< UCB AL=L> viscosity with 25 DEG C in the Brookfield Viskosimeter, spindle No. 4 (5rpm)< September> &tilde& 45,000 mPa.s
 <tb>< /TABLE>

It became a shampoo with very good foam abilities and good skin compatibility as well as better hair-conditioning properties opposite a shampoo without terpolymer obtained.

The shampoo remained with three-month storage with 40 DEG C viscosity-stable; the particles were still uniform in the basis dispersed. Example 5 shampoo

<tb>< TABLE> Columns=2>
 <tb> Head Col 1:
 <tb> Head Col 2: Gew. - %
 <tb> Citronensäurelaurylpolyglykolestersulfosuccinat, disodium salt< September> 4,0
 <tb>< UCB AL=L> Natriumlaurylethercarboxylat (&tilde& 4 EO)< September> 4,0
 <tb> Natriumlauroylethersarkosinat< September> 2,0
 <tb>< UCB AL=L> Natriumlauroylglutamat< September> 1,0
 <tb> C12-C14-Alkylglucosid (P.D. SIMILAR 1.4)< SEPTEMBER> 4,5
 <tb>< UCB AL=L> Kokosdimethylaminoxid< September> 1,5
 <tb> Natriumcocamphoacetat< September> 2,5
 <tb>< UCB AL=L> ethyl acrylate/Diethylaminoethylmethacrylat/C12-C14-Alkyl-PEG-20-itaconat-Terpolymer< September> 2,0
 <tb>< UCB AL=L> preservative< September> 0,5

<tb> Polyquaternium-7< September> 0,5
 <tb> Extrapon TM chamomile spec.< CEL AL= R> 2,0
 <tb>< UCB AL=L> citric acid< September> 0,5
 <tb> lactic acid< September> 0,1
 <tb> Pyrrolidoncarbonsäure< September> 0,1
 <tb>< UCB AL=L> glycolic acid< September> 0,1
 <tb> malic acid< September> 0,1
 <tb> perfume< September> 0,5
 <tb> water< CEL AL= R> ad 100,0
 <tb> pH value< September> 5,5
 <tb> viscosity with 25 DEG C in the Brookfield Viskosimeter, spindle No. 4 (5rpm)< CEL AL= R>
 &tilde& 28,000 mPa.s
 <tb>< /TABLE>

This product shown opposite a Terpolymer free product a better foam behavior, an improved wet and drying combing barness, glossiness and volume of the hair washed with it and was viscosity-stable with three-month storage with 40 DEG C.

The worth-determining portions of the extract could become the corresponding initial concentration certain.